weight. The Examiner then referred to Examples 7-9 to derive ratios greater than 1.66:1 and to show obviousness in light of the amounts employed by Mester et al.

The claimed ratio of the cerium oxide to the lanthanide oxides other than ceria being at least 1.66:1 by weight is an important fact that differentiates the present invention from the prior art. In the present invention the ratio is important because only a small amount of other lanthanide oxides is required to stabilize the ceria. The prior art use of greater amounts of lanthanide oxides is not only a waste but also a costly expense not considered by the prior art. The presently claimed invention avoids such waste as seen in the prior art.

Examples 1-4 of the present invention all have ratios of the cerium oxide to the lanthanide oxides as being at least 1.66:1 by weight. Examples 1 and 3 have 10% CeO2 in a composition having a total of 12% of rare earth metals. 83.33% of CeO2 is present in the composition and the resulting ratio of the cerium oxide to the lanthanide oxides other than ceria is 4.88:1.

Example 2 has 10% CeO2 in a composition having a total of 16% of rare earth metals. 62.5% of CeO2 is present in the composition and the resulting ratio of the cerium oxide to the lanthanide oxides other than ceria is 1.66:1.

Example 4 has 10% CeO2 in a composition having a total of 13.5% of rare earth metals. 74.07% of CeO2 is present in the composition and the resulting ratio of the cerium oxide to the lanthanide oxides other than ceria is 2.86:1.

In contrast, Examples 7 and 9 shown in Table 2 in Mester et al., possess lower ratios of ceria to lanthanide oxides other than ceria. Example 7 has a composition having a total of 29.2% of rare earth metals 15.6 % of which is CeO2. 53.42% of CeO2 is present in the composition and thus the resulting ratio of the cerium oxide to the lanthanide oxides other than ceria is 1.14:1. Likewise, the composition of Example 9 has a total of 38.1% of rare earth metals, 21.0 % of the total is CeO2. 55.38% of CeO2 is present in the composition and the resulting ratio of the cerium oxide to the lanthanide oxides other than ceria is 1.24:1. Both these examples fail to teach at least 1.66:1 of the cerium oxide to the lanthanide oxides, as claimed. As noted above, the Examples of the applied prior art represent a costly addition of lanthanide oxides avoided by the claimed composition.

The composition of Example 8 of Mester et al., has a ratio of cerium oxide to the lanthanide oxides other than ceria of greater that 1.66. The composition has a total of 18.1% of rare earth metals, 15.6% of which is CeO2. 86.18% of CeO2 is

present in the composition and the resulting ratio of the cerium oxide to the lanthanide oxides other than ceria is 6.24:1. This example however, possesses 3% of an additional component being CoO. Although Example 8 of Mester et al. meets the ratio of the present invention, it also possesses CoO. The claims of the present invention specifically uses the transitional phrase "consisting essentially of" which closes the composition to substances that will affect the basic and novel characteristics of the composition. Thus, even though Mester et al. is directed to creating a catalyst for use in an FCC system, the addition of CoO in the composition produces catalytic results that are not part of the present invention. Moreover, since the catalytic arts are empirical, the addition of elements, such as CoO, to the composition of the present invention may have drastically different effects than desired and such effects cannot be predicted. It cannot be said that the present invention is obvious in light of the prior art since not even one of ordinary skill in the catalytic art can predict the particular activity of the claimed composition that further includes the addition of CoO.

Furthermore the Examiner's conclusion that the additional components do not affect the composition because the Examiner believes the composition of the prior art functions effectively for its purpose is a blanket statement and does not take into account the empirical nature of the catalytic arts.

With respect to the methods of making silica-alumina being shown in the prior art, the Applicants appreciate many methods are known by one of skill in the art.

With respect to the obviousness double patenting issue over U.S. Pat. No. 6,800,586, the Applicants will file a terminal disclaimer once other issues are resolved. However, Examiner's provisional obviousness double patenting rejection over copending Application Nos. 10/268,256 and 10/763,812 is respectfully traversed.

Copending Application No. 10/268,256 is directed toward an additive composition suitable for reducing CO emissions during catalyst regeneration in a fluid catalytic cracking process. The composition includes an acidic oxide support, cerium oxide, at least one oxide of a lanthanide series element other than cerium oxide, optionally, at least one oxide of a transition metal selected from Groups Ib and IIb of the Periodic Table and mixtures thereof as well as at least one precious metal, which is a known CO oxidation catalyst.

Unlike the 10/268,256 application, the present invention is directed toward a completely different purpose in that it is directed toward compositions for NOx

removal. Furthermore, the present composition, as claimed, does not include nor contain the precious metal of the 10/268,256 application. The composition of the present invention consists essentially of an acidic oxide support, cerium oxide, at least one oxide of a lanthanide series element other than cerium oxide, and optionally, at least one oxide of a transition metal selected from Groups Ib and IIb of the Periodic Table and mixtures.

Copending Application No. 10/763,812 is directed toward a NOx removal composition and claims a composition having a specific sized microsphere of from about 20 to 200 microns. Furthermore the composition of Copending Application No. 10/763,812 comprises a mixed oxide of cerium and zirconium, optionally, an oxide from the lanthanide series element other than ceria, and optionally, at least one oxide of a transition metal selected from Groups Ib and IIb of the Periodic Table and mixtures thereof.

The present invention, unlike Application No. 10/763,812 does not limit the composition to a microsphere having a specific size. Furthermore the present invention does not claim the use of a mixed oxide of cerium and zirconium. Instead, the present invention claims the use of an acidic oxide support. The acidic oxide support is preferably either an alumina or silica-alumina. The present invention neither mentions nor claims the use of a mixed oxide of cerium and zirconium. The mixture of cerium and zirconium oxides as set forth in the application is not an acidic support as contemplated by the present invention.

For the foregoing reasons, Applicants respectfully submit that Claims 1-10, 14, 17-21 and 30-33 are patentably distinguishable over the art of record. Applicants respectfully solicit allowance of the claims.

Applicant's would like to bring a typographical error to the Examiner's attention. Claim 17 recites a ratio of --1:66:1--. This is an obvious typographical error as the ratio should be --1.66:1--. The Examiner is kindly requested to take notice of this error and is authorized to make the appropriate change by Examiner's amendment.

Respectfully submitted,

Libby Babu
Registration No. 51,326
(703) 246-9641